

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-41 (Canceled)

42. (CURRENTLY AMENDED) A router in an Internet Protocol, IP, based ~~UNITS-UMTS~~ Terrestrial Radio Access Network, [UTRAN], Transport Network within a Universal Mobile Telecommunication System, the UTRAN transport network ~~carries~~ carrying Dedicated Channel (DCH) frames on DCHs between a RNC and at least one Node B, ~~characterized in that the router comprises~~ comprising:

means for splitting one DCH traffic flow into at least two DCH traffic flows by using an IP multicast protocol.

43. (PREVIOUSLY PRESENTED) The router according to claim 42, wherein the router comprises means for replicating each DCH frame and means for transmitting the replicated DCH frames according to the IP multicast protocol.

44. (CURRENTLY AMENDED) The router according to claim 42, wherein the IP multicast protocol is a Core Based Trees Multicast Routing version 2, [CBTv2] protocol.

45. (CURRENTLY AMENDED) The router according to claim 42, wherein the IP multicast protocol is a Protocol Independent Multicast-Sparse Mode, [PIM-SM] protocol.

46. (CURRENTLY AMENDED) The router according to claim 42, wherein each DCH traffic flow is assigned a dedicated multicast destination address in ~~one or more of the~~ at least one Node-Bs B.

47. (CURRENTLY AMENDED) The router according to claim ~~42~~ 46, wherein the means for splitting further comprises means for identifying a mapping between the RNC and the multicast destination address by using a CBTv2 or PIM-SM bootstrap mechanism.

48. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein the router comprises~~ further comprising:

means for determining whether the router is a splitting and/or combination router by using ~~the~~ protocol(s) CBTv2 and/or MLD,

wherein the protocol(s) are/is arranged to determine ~~the~~ a number of listeners for a specific multicast destination address.

49. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein the router comprises~~ further comprising:

means for determining whether the router is a splitting and/or combination router by using the protocol(s) PIM-SM and/or MLD, wherein the protocol(s) are/is arranged to determine ~~the~~ a number of listeners for a specific multicast destination address.

50. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein the router comprises~~ further comprising:

means for determining whether the router is a splitting and/or combination router by using the protocol(s) PIM-SM and/or Internet Group Management Protocol, [IGMP],

wherein the protocol(s) are/is arranged to determine ~~the~~ a number of listeners for a specific multicast destination address.

51. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein the router comprises~~ further comprising:

means for determining whether the router is a splitting and/or combination router by using the protocol(s) CBTv2 and/or Internet Group Management Protocol, [IGMP],

wherein the protocol(s) are/is arranged to determine ~~the~~ a number of listeners for a specific multicast destination address.

52. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein the router comprises~~ further comprising:

means for identifying DCH frames belonging to different uplink DCH traffic flows by means of utilization of ~~the~~ a multicast address, assigned as the downlink destination address, as ~~the~~ a source address of the DCH frames sent in the uplink DCH traffic flows from all participating Node-~~As~~ Bs.

53. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein the router comprises~~ further comprising:

means for identifying DCH frames belonging to different uplink DCH traffic flows by retrieving ~~the~~ a destination address and ~~the~~ destination port(s) of ~~the~~ uplink flows from the RNC.

54. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein the router comprises~~ further comprising:

means for identifying DCH frames belonging to different uplink DCH traffic flows by using an uplink flow identity implicit in ~~the~~ a downlink DCH traffic flow.

55. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein the router comprises~~ further comprising:

means for identifying DCH frames belonging to different uplink DCH traffic flows by modifying ~~the~~ MLD or IGMP protocol and ~~the~~ a multicast routing protocol such that ~~the~~ a destination port of ~~the~~ an uplink is included in ~~the~~ messages that are used to build ~~the~~ a multicast tree.

56. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein~~
~~the router comprises~~ further comprising:

means for combining at least two uplink DCH traffic flows into one single
uplink DCH traffic flow.

57. (CURRENTLY AMENDED) The router according to claim 56, wherein
the means for combining ~~comprises~~ further comprises:

means for building a new DCH frame from a received set of DCH frames
in the at least two uplink DCH traffic flows to be combined;

means for encapsulating the new DCH frame in a UDP packet; and

means for sending the UDP packet in ~~the~~ an uplink direction.

58. (CURRENTLY AMENDED) The router according to claim 57, wherein
the means for building the new DCH frame from ~~a~~ the received set of DCH
frames to be combined ~~comprises~~ further comprises:

means for including a selected set of Transport Blocks, (TBs), in ~~the~~ a
payload of the new DCH frame;

means for copying ~~the~~ a header of the received DCH frames to the new
DCH frame; and

selecting a Quality Estimate, (QE), value for the new DCH frame and, if a
payload CRC is used, calculating a payload CRC for the new DCH frame.

59. (CURRENTLY AMENDED) The router according to claim 42, ~~wherein~~
~~the router comprises~~ further comprising:

means for estimating a Latest Accepted Time of Arrival, [LAToA], for a
next set of DCH frames to be combined having a Connection Frame Number n,
[CFN_n], based on ~~the~~ times of arrival of ~~the~~ previous set of frames having a
CFN n-1; and

means for adjusting the estimates of the LAToA for each new frame
adapted to ~~the~~ a maximum transport delay that a frame can experience under
normal circumstances on its path from the at least one Node B to the
~~combining~~ router.

60. (CURRENTLY AMENDED) A method in an Internet Protocol, IP,
based UMTS Terrestrial Radio Access Network, [UTRAN], Transport Network
within a Universal Mobile Telecommunication System, the UTRAN transport
network ~~carries~~ carrying Dedicated Channel (DCH) frames on DCHs between a
RNC and at least one Node B, ~~the method is characterised in that it comprises~~
~~the step of~~ comprising:

~~splitting~~ splitting, within a router, one DCH traffic flow into at least two
DCH traffic flows by using an IP multicast protocol.

61. (CURRENTLY AMENDED) The method according to claim 60,
~~comprises the further steps of~~ further comprising:

~~//~~ replicating each DCH frame; and

transmitting the replicated DCH frames according to the IP multicast protocol.

62. (CURRENTLY AMENDED) The method according to claim 60, wherein the IP multicast protocol is a Core Based Trees Multicast Routing version 2, (CBTv2) protocol.

63. (CURRENTLY AMENDED) The method according to claim 60,
wherein the IP multicast protocol is a Protocol Independent Multicast-Sparse
Mode, (PIM-SM) protocol.

64. (CURRENTLY AMENDED) The method according to claim 60,
wherein each DCH traffic flow is assigned a dedicated multicast destination
address in one or more of the at least one Node-Bs B.

65. (CURRENTLY AMENDED) The method according to claim 60, ~~comprises the further step of comprising:~~

4- identifying a mapping between the RNC and the a multicast destination address by using a CBTv2 or PIM-SM bootstrap mechanism.

66. (CURRENTLY AMENDED) The method according to claim 60, ~~comprises the further step of comprising:~~

~~{{}}~~determining whether the router is a splitting and/or combination router by using ~~the~~ protocol(s) CBTv2 and/or MLD,

wherein the protocol(s) are/is arranged to determine ~~the~~ a number of listeners for a specific multicast destination address.

67. (CURRENTLY AMENDED) The method according to claim 60, ~~comprises the further step of~~ comprising:

~~{{}}~~determining whether the router is a splitting and/or combination router by using the protocol(s) PIM-SM and/or MLD,

wherein the protocol(s) are/is arranged to determine ~~the~~ a number of listeners for a specific multicast destination address.

68. (CURRENTLY AMENDED) The method according to claim 60, ~~comprises the further step of~~ comprising:

~~{{}}~~determining whether the router is a splitting and/or combination router by using the protocol(s) PIM-SM and/or Internet Group Management Protocol, (IGMP),

wherein the protocol(s) are/is arranged to determine ~~the~~ a number of listeners for a specific multicast destination address.

69. (CURRENTLY AMENDED) The method according to claim 60, ~~comprises the further step of~~ comprising:

~~{{ }}~~determining whether the router is a splitting and/or combination router by using the protocol(s) CBTv2 and/or Internet Group Management Protocol, [IGMP],

wherein the protocol(s) are/is arranged to determine ~~the~~ a number of listeners for a specific multicast destination address.

70. (CURRENTLY AMENDED) The method according to claim 60, ~~comprises the further step of~~ comprising:

~~{{ }}~~identifying DCH frames belonging to different uplink DCH traffic flows by means of a utilization of ~~the~~ a multicast address, assigned as ~~the~~ a downlink destination address, as ~~the~~ a source address of the DCH frames sent in the uplink DCH traffic flows from all participating Node-As Bs.

71. (CURRENTLY AMENDED) The method according to claim 70, ~~comprises the further step of~~ comprising:

~~{{ }}~~identifying an originating Node B of an uplink DCH frame, based on a destination IP address and a destination UDP port assigned by the RNC to the Node B for the uplink of the DCH.

72. (CURRENTLY AMENDED) The method according to claim 60, ~~comprises the further step of~~ comprising:

~~[[~~identifying DCH frames belonging to different uplink DCH traffic flows by retrieving the destination address and the destination port(s) of the uplink DCH traffic flows from the RNC.

73. (CURRENTLY AMENDED) The method according to claim 60,
~~comprises the further step of~~ comprising:

~~[[~~identifying DCH frames belonging to different uplink DCH traffic flows by using an uplink flow identity implicit in the downlink flow.

74. (CURRENTLY AMENDED) The method according to claim 60,
~~comprises the further step of~~ comprising:

~~[[~~identifying DCH frames belonging to different uplink DCH traffic flows by modifying the MLD or IGMP protocol and ~~the a~~ a multicast routing protocol such that the destination port of the uplink is included in ~~the~~ messages that are used to build ~~the a~~ a multicast tree.

75. (CURRENTLY AMENDED) The method according to claim 70,
~~comprises the further step of~~ comprising:

~~[[~~identifying an originating Node B of an uplink DCH frame, based on a source UDP port assigned by the RNC to the Node B for the uplink of the DCH.

76. (CURRENTLY AMENDED) The method according to claim 72,
~~comprises the further step of~~ comprising:

~~[[]]~~identifying an originating Node B of an uplink DCH frame, based on a source IP address.

77. (CURRENTLY AMENDED) The method according to claim 60,
~~comprises the further step of~~ comprising:

~~[[]]~~combining at least two uplink DCH traffic flows into one uplink DCH traffic flow.

78. (CURRENTLY AMENDED) The method according to claim 77,
~~comprises the further step of~~ comprising:

~~[[]]~~building a new DCH frame from a received set of DCH frames in the at least two uplink DCH traffic flows to be combined;

~~[[]]~~encapsulating the new DCH frame in a UDP packet; and

~~[[]]~~sending the UDP packet in ~~the an~~ uplink direction.

79. (CURRENTLY AMENDED) The method according to claim 78,
wherein the building step further ~~comprises the further steps of~~:

~~[[]]~~including a selected set of Transport Blocks, TBs, in the payload of the new DCH frame;

~~[[]]~~copying the header of the received DCH frames to the new DCH frame; and

~~[[]]~~selecting a Quality Estimate, QE, value for the new DCH frame and, if a payload CRC is used, ~~[[]]~~calculating a payload CRC for the new DCH frame.

80. (CURRENTLY AMENDED) The method according to claim 60,
~~comprises the further step of~~ comprising:

~~[[]]~~estimating a Latest Accepted Time of Arrival, [LAToA], for a next set of DCH frames to be combined having a Connection Frame Number n, [CFN_n], based on the times of arrival of the previous set of frames having a CFNn-1, and

~~[[]]~~adjusting the estimates of the LAToA for each new frame adapted to the maximum transport delay that a frame can experience under normal circumstances on its path from the Node B to the combining router.

81. (CURRENTLY AMENDED) A computer program product directly loadable into the internal memory of a computer within a node in a Universal Mobile Telecommunication System, comprising ~~the~~ software code portions for performing the ~~steps~~ method of claim 60.

82. (CURRENTLY AMENDED) A computer program product stored on a computer usable medium, comprising a readable program for causing a computer, within a node in a Universal Mobile Telecommunication System to control an execution of the ~~steps~~ method of claim 60.

83. (NEW) The router according to claim 42, wherein the router is in a communication traffic path between the RNC and the at least one Node B.

84. (NEW) The method according to claim 60, wherein the router is in a communication traffic path between the RNC and the at least one Node B.